

REVISION OF THE AUSTRALIAN SPECIES OF *CHRYSOBOTHRIS*
(FAM. BUPRESTIDAE), TOGETHER WITH NOTES, AND
DESCRIPTIONS OF NEW SPECIES OF COLEOPTERA.

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(Nine Text-figures.)

[Read 29th July, 1925.]

Sixteen names are recorded for Australian species of the genus, which are (as with other genera of Buprestidae) greatly confused in our collections. This is not surprising, since the general facies of different species is very similar so far as the upper surface is concerned.

Of the sixteen, I think I have clearly identified eleven. Of the remaining five I would note as follows:—

1. *C. peroni* L. & G. from Kangaroo Island is impossible to determine from the incomplete description (applicable to most of the species), while its figure is evidently incorrectly drawn, the narrow width compared with length being inconsistent with the dimensions as stated in description. An example from Mulwala (Murray River, Victoria) labelled *peroni* in the South Australian Museum is identical with *C. mastersi* Macl.
2. *C. auropunctata* Deyr. is described from New Guinea. Kerremans (*Gen. Ins.*) gives Australia also for this species, but its imperfect description prevents determination. I think it should be omitted from the Australian list until the type can be examined and compared with other species.
3. *C. regina* Kerr.—The curious wording of the description of the apex of abdomen apparently indicates the trispinose apex that is characteristic of *C. incana* Macl., but the elytra are said to have "cinq fossettes, deux à la base, une au milieu du disque . . . deux au tiers postérieur." If this "one" is placed on the suture I have never seen an example. If, however, it is in the usual position it surely has its "fellow" on the other elytron. The wording may be a "lapsus calami" or the type may be a "freak" example.
4. *C. carteri* Obenb., from S. Queensland, described as having a non-carinate abdomen would point to the ♂ of my species (*C. octomaculata*, infra) but for two characters that are inconsistent with this—viz. (1) "circular coppery foveae superficial" on elytra, (2) underside "green in the middle, coppery on the sides." In some examples of *C. viridis* Macl. the carina is subobsolete, so that the very variable *viridis* may include *carteri* Obenb.
5. *C. blackburni* Obenb.—I cannot distinguish this from some examples of *mastersi* Macl. The only species with which Obenberger compares his three Australian species is *C. australasiae* Hope, and this is done so vaguely as to give little help, besides giving no indication of the species determined by him as *australasiae*. The species so determined by Kerremans (of which I have an example before me labelled *australasiae* by him from the British Museum) is clearly *mastersi* Macl.

The following synonymy seems certain, the doubtful cases being indicated by a (?):—

1. *C. incana* Macl. = *interioris* Blackb. = ? *regina* Kerr.

Macleay's type exactly corresponds with Blackburn's detailed description.

2. *C. saundersi* Macl. = *hopei* Obenb.

The description of the latter exactly corresponds with Macleay's type.

3. *C. viridis* Macl. = *frenchi* Kerr. = ? *simplicifrons* Kerr.

Kerremans's descriptions do not indicate any clear distinction from the variable *C. viridis* Macl.

C. frenchi Kerr.—The type has lost the head and thorax. Its inadequate description had led me to consider it as a synonym of the variable and widely distributed *C. viridis* Macl., while the drawing and notes sent me of its abdomen are quite in conformity with this synonymy.

C. simplicifrons Kerr., is, I think, doubtfully distinct from *C. viridis* ♀, though at present I cannot definitely call it a synonym. I have an example from the Dorrigo, N.S.W., which corresponds with Mr. Blair's notes on the type. The apex of abdomen is rather squarely emarginate, with sharply defined medial carina (as is the case with the ♀ of *C. viridis*, the ♂ often having this carina vaguely defined), the underside duller aeneous instead of brilliant green, eyes slightly wider apart, etc.

Distinctive Characters.—The most distinctive characters that separate the species are found on the underside, especially in (a) the structure of the apical segment of the abdomen, (b) the colour and sculpture of the abdomen. Further differentiating characters lie in (c) the form and sculpture of the prothorax, (d) the micro-sculpture of the elytra and the form of the elytral foveae (fossettes). Finally, the size and colour may be helpful as secondary considerations, but are often fallacious guides. The occurrence of dwarfs—probably due to malnutrition of the larvae—is well known to collectors, while the ordinary variations of size in the species of wide distribution are considerable. In the long series (24 examples) of *C. mastersi* Macl. before me, the dimensions vary from 16×6 to 10.5×4 mm., and of *C. incana* Macl. from 20×7 to 12×4.5 mm., the females in general being larger than the males.

Colour.—The colour of the upper surface is singularly uniform, compared with species of other genera. In general, more or less violet bronze, sometimes greenish or olivaceous, the colours, in old specimens, become nearly or quite black. In all the Australian species examined by me—with the slight but constant modification noted in *C. octomaculata* infra—the elytra have six foveate depressions, three on each elytron, of a brilliant metallic copper or green, similarly placed; though an obliteration of this metallic colouration by age or chemical action would seem to account for the different number of these recorded in descriptions.

The size of these foveae seems constant in the same species, but varies in the genus sufficiently to serve as a useful aid in diagnosis. The first pair are placed within the angles formed by the prominent basal lobes, the second pair are medial on the 2nd costae, the third pair on the apical third, on the 3rd costae.

Elytral sculpture.—In general there are four well-marked costae on each elytron, besides a short scutellary costa; but in some species only the first costa (nearest the suture) is clearly defined, parts of the others being indicated. The costae are prominent in *mastersi*, *incana*, *subsimilis* and *amplicollis*; less so in *saundersi* and *australasiae*, and vague in *viridis* and (?) *frenchi*.

An excellent character—requiring a good lens or (better) a good binocular microscope—is the micro or ground sculpture of the upper surface, always

constant for the species, but with considerable variation in the genus. Thus *australasiae* Hope is distinguished by more transverse rugae (very strong on pronotum); *arcana*, *mastersi* and *saundersi* have round punctures distinctly separated, with different degrees of density and size; *viridis* is scarcely punctate, but scalose, as in many *Cisseis*; *saundersi* and *amplicollis* are distinguished in having the pronotum almost entirely punctate, little strigose.

Form of Prothorax.—The sides of prothorax are, in general, not very variable; the majority of species having what Thomson called "subhexagonal" outlines, the sides contracting obliquely in front and behind, with a larger medial space, sometimes concave.

The following notable exceptions to the above are as follows:—in *australasiae* Hope, the sides widen from apex to near base, where they are rather abruptly and bluntly rounded (vide Saunders' figure, *Trans. Ent. Soc. Lond.*, 1868); in *amplicollis* Thoms. the sides have a distinct bulge and are widest at the apical third; in *viridis* Macl. the sides are nearly straight, or feebly undulate.

Abdominal characters.—The apical segment is strongly carinate in *mastersi*, *saundersi*, *arcana*; feebly so in *australasiae*, *viridis* ♂ and in the ♀ of *amplicollis*, and non-carinate in *subsimplis*, *caelatus*, n. sp., and *carteri* Obenb., while the carina appears only in the female of *octomaculata*. The abdomen is varicoloured, chiefly golden with blue or violet apical margins to segments in *australasiae*, *mastersi*, *amplicollis* and *octomaculata*, concolorous in *arcana*, *saundersi* and *subsimplis*—the second of these almost black—and chiefly bright green with purple patches in *viridis*. The structure of the apices varies sexually, the ♂ generally having the wider excision, and often bispinose; *arcana* is remarkable for its trispinose apex, the carina being produced into a medial spine; *subsimplis* is exceptional in having a forked tooth on each side of a wide triangular excision and may thus be said to be 4-spined. The apical excision is small in *saundersi* and in the ♀ of *australasiae*.

Distribution and Habit.—As with many other Buprestidae, some of the species have a very wide distribution. Thus, of the longer series before me, 33 of *arcana*, 19 of *viridis*, 24 of *mastersi*, 10 of *subsimplis*, I find that the first occurs widely in N. W. Australia and Queensland (1 ex. from Narrabri, N.S.W.); *mastersi* occurs in Queensland, Western Australia, South Australia, N. Victoria; *saundersi* in Queensland and Western Australia; *viridis* in Queensland, New South Wales, and Western Australia; *amplicollis* in Western Australia and South Australia, *subsimplis* in Queensland, Western Australia and Victoria.

Mr. J. Clark tells me that they frequent acacias, like *Melobasis*, and fly rapidly at the least disturbance. They are comparatively rare, few collections having them in any number. I have, however, been able, with the courteous assistance of my colleague entomologists of the British Museum and of all the Australian Museums, to examine a large number of species—many examples compared with types—as well as the Macleay types.

The following are undescribed:—

CHRYSOBOTHRIIS CAELATUS, n. sp.

♂. Robust, widely oblong-ovate, above and below obscure violet-bronze, the depressed areas of pronotum and the six elytral foveae coppery, middle of abdomen obscure green.

Head with embossed surface, rather strongly pilose, a curved "horse-shoe" impression between the eyes, with three elongate, shining nodules in front of this and smaller irregular nodules near epistoma, the last feebly sinuate, interocular

area wide and sulcate-carinate (a short linear sulcus between carinate margins), frontal area regularly punctate, antennae wanting. *Prothorax*: Apex subtruncate, base very sinuous, medial lobe rather strongly produced and truncate at scutellum, widest in front of middle, sides angulately jagged, with a strong triangular emargination at apical third, thence irregularly narrowed to base, all angles produced and acute. Disc with wide medial sulcus, its basal third smooth, surface irregularly embossed; rugose-punctate near middle, with larger nitid knobs towards sides, with an underlying system of coarse punctures. *Scutellum* triangular, smooth. *Elytra* rather convex, thrice as long as prothorax and one-third wider than it, with six large, rather deep, coppery foveae in the usual positions, the basal and post-medial round, the medial rather square; the usual costae evident but not strongly raised, the surface punctures stronger than usual—larger and more widely separated than in *C. mastersi*—with some rugae apparent near costae and at sides; margins behind finely serrate, underside coarsely punctate, the abdomen longitudinally rugose-punctate; apical segment of abdomen subcarinate, a short, rather flat, smooth, longitudinal rugosity forming a sort of carina; apex with wide concave excision, dentate at extremities.

Dimensions: 17 × 7.2 mm.

Habitat.—New South Wales: Mossgiel (in Australian Museum).

Type, No. K.32692 in Australian Museum.

♀ has the elytra more sharply attenuated to apex, the apical segment scarcely excised, the carina less evident (sub-obsolete). Paratype, No. K.32691 in Australian Museum.

The female example is labelled Mitchell River, and, though differing as above, is clearly conspecific with the Mossgiel example. It is the widest and most convex of the Australian species, and it may be differentiated by its roughly embossed pronotum with its dentate sides. Name from *caelare*, to emboss.

CHRYSOBOTHRIS OCTOMACULATA, n. sp.

Ovate, dark purple-bronze above, elytra with six large circular coppery foveae, together with an oblique elongate spot adjacent and exterior to the medial foveae; underside brilliantly varicoloured, metasternum and segments of abdomen golden-green and purple, the latter violaceous at anterior margins and sides, underside of femora golden-green and purple, tarsi blue.

Head sparsely pilose, rugose-punctate, depressed parts coppery, epistoma with arcuate triangular excision, eyes moderately converging behind, interspace slightly wider than in *viridis* Macl., longitudinally wrinkled on vertex. *Prothorax* short and transverse, sides subhexagonal, sometimes undulate, with a small concavity in middle, more strongly and subsinuately narrowed behind than in front, equally wide at anterior and basal third, all angles produced and acute. Disc with medial line generally indicated by short depression, a wide transverse depression near apex, two shallow foveae on posterior half, surface finely, transversely rugose-striolate. *Scutellum* triangular. *Elytra* more than thrice as long and nearly one and a half times as wide as prothorax, shoulders unusually squarely rounded, thence to apical third sub-parallel, margins on apical half rather strongly serrated, usual costae vague, often sub-obsolete on basal half—except the presutural—a wide convexity (not carinate) running obliquely from the shoulder separates the medial fovea from the adjacent coppery mark, a wide depression following its course within this; surface minutely, densely and clearly punctate. Metasternum sparsely punctate, abdomen longitudinally rugose-punctate, apical segment non-

carinate, slightly depressed in middle, with wide square excision limited by two prominent teeth; front femora with wide obtuse tooth.

Type ♂, No. K.32689 in Australian Museum.

♀ differs in having the apical segment of abdomen clearly but not prominently carinate, with a narrower, semicircular excision limited by two wider teeth.

Type ♀, in Macleay Museum.

Dimensions: 9-12 × 4-5 mm.

Habitat.—Queensland (Duaringa, Port Denison, Charters Towers, Brisbane).

Ten examples are before me, five of each sex; the sexes only distinguishable as above, being alike in form, size, and in the unusual ornamentation of the additional coppery spot, forming an adjunct to the medial fovea but always separated from it. Three examples from the Macleay Museum include both sexes labelled Port Denison in Mr. Masters's handwriting. The female is near *C. blackburni* Obenb., but besides coming from Western Australia this species is said to have the foveae as in *australasiae* Hope, which is not the case with *octo-maculata*.

VAR.—Two ♀ examples (one from the British Museum) are only to be distinguished from the above by the absence of a clearly shown additional mark exterior to the medial spot.

Table of Australian *Chrysobothris*.

1. Apex of abdomen 4-spinose	<i>subsimilis</i> Thoms.
Apex of abdomen 3-spinose	<i>incana</i> MacL.
*Apex of abdomen 2-spinose	2
2. Form wide (7 mm.), sides of pronotum angulately toothed	<i>caelatus</i> , n. sp.
Form normal (less than 6 mm. wide), sides of pronotum not so toothed	3
3. Pronotum widest near base	<i>australasiae</i> L. & G.
Pronotum not widest behind middle	4
4. Sides of pronotum with obvious enlargement in front of middle ..	<i>amplicollis</i> Thoms.
Sides of pronotum nearly straight	<i>viridis</i> MacL.
Sides of pronotum subhexagonal (subequally attenuate each way)	5
5. Apical segment of abdomen carinate in both sexes	6
Apical segment of abdomen carinate only in ♀	<i>octomaculata</i> , n. sp.
6. Underside concolorous (nearly black)	<i>saundersi</i> MacL.
Underside brilliantly varicolorous	<i>mastersi</i> MacL.

The following captures are chiefly the outcome of two very interesting expeditions:—(1) With the Royal Australasian Ornithologists' Union camp at Byfield, near Yeppoon (Rockhampton district, Queensland) in October, 1924; (2) with the University Expedition, organized by Professor Launcelot Harrison, of Sydney University, to Barrington Tops, New South Wales, in January, 1925.

ASTRAEUS INTRICATUS, n. sp. Text-fig. 1.

Nitid, head metallic greenish at apex, purple at base, pronotum metallic purple, brighter at sides, elytra cyaneous, with the following yellow markings on each; an elongate oval basal spot, an elongate lateral mark extending from shoulder to about the middle, having an oblique inward extension over four lateral intervals, an irregular postmedian, subfasciate mark connected with a subsutural club-shaped spot extending forward behind the basal spot, and also with a triangular mark extending backward to the base of apical spine; underside and femora brassy bronze, tibiae and tarsi testaceous, antennae purple coppery.

Head closely and strongly punctate, longitudinally carinate in middle, and, like the pronotum, clothed with fine yellow hair. *Prothorax* obliquely narrowing

* *Australasiae* L. & G. has the apex of abdomen arcuately excised in ♂, with a small triangular excision in ♀, non-spinose in both sexes; but has been included under 2-spinose species from the difficulty of clear distinction between this structure and some of the 2-spinose species.

from base to apex, sides scarcely arcuate, apex nearly straight, base strongly bisinuate, medial line indicated on basal half by narrow smooth space, on apical half by wide depression; whole surface coarsely punctate, the sculpture close and subrugose at sides, more sparse on disc. *Elytra* striate-punctate, the striae outlined by finely cut costae, intervals between costae flat, containing shallow punctures, elytra divergent and bispinose at apex, the sutural spine robust; prosternum coarsely, abdomen finely and rather closely, punctate; underside rather densely tomentose.

Dimensions: 10 × 4 mm.

Habitat.—New South Wales: Monaro district.

A single male example in the Macleay Museum appears to be nearest to *A. vittatus* V. d. Poll. from N. W. Australia; but the pattern of the elytral colours is distinct, while there are other colour differences, e.g. *vittatus* has the pronotum bronzy green in middle, and the head black with purplish reflections.

Type in the Macleay Museum.

STIGMODERA (Subgen. CASTIARINA) HARRISONI, n. sp. Text-fig. 2.

♀. Oblong-ovate; head, pronotum, underside and appendages brilliant brassy green, the basal area of pronotum showing slight purplish gleams. Elytra blue-green with the following light markings on each—a sub-basal triangular spot (having two of its sides parallel to base and suture respectively) connected with a blood-red lateral mark behind the shoulder; a narrow, lunate, medial spot reaching neither side nor suture, a short narrow preapical fascia extending obliquely backward from the 4th interval, connected with a blood-red lateral macula extending over three lateral intervals backwards, half-way between the fascia and apex; the discal markings yellow.

Head excavated and channelled between eyes; irregularly punctate, the punctures small and close near base. *Prothorax* widest at base, arcuately narrowed to, and subsinuate near, apex; moderately bisinuate at base and apex, posterior angles rectangular, anterior acute; disc without medial sulcus, save for a large basal fovea; two punctate excisions at base (half-way between scutellum and side); disc irregularly punctate, the punctures nowhere dense, but closer and finer on apical half. *Scutellum* large, triangular, depressed in middle and finely punctate. *Elytra* rather flat, of same width as prothorax at base and thrice as long as it, sides slightly widened at shoulder, very feebly compressed behind this, slightly widest behind middle; apices widely bilunate, with a defined but short external tooth, the sutural angle at apex separately rounded and feebly produced; margins entire; striate-punctate, intervals quite smooth and nearly flat, underside glabrous and finely punctate, sternum sparsely, abdomen densely so; last segment rounded behind.

♂ latet.

Dimensions: 17 × 6.4 mm.

Habitat.—New South Wales: Barrington Tops.

A beautiful species belonging to the *producta* Saund.-*spectabilis* Kerr. group, that would stand next to the latter in my tabulation, from which it differs as follows:—(1) Larger size and flatter form; (2) apices wider with less pronounced teeth; (3) quite differently shaped yellow maculae (the sub-basal triangular, the four hinder being narrowly fasciate), the same in *spectabilis* being larger and round.

A single specimen taken by the University expedition is dedicated to Professor Launcelot Harrison, who so ably organized and conducted the research on Barrington Tops in January, 1925.

Type in the Macleay Museum.

STIGMODERA SUBVERSICOLOR, n. sp.

♂. Elongate, cylindric; head, underside, and appendages coppery, pronotum dark blue with undefined violet-coppery margins; elytra blue (in one example violaceous) with the following markings yellow:—two large post-basal spots* in general produced to basal margin, thence again backward to beyond the humeral swelling; four rounded spots midway (two discal spots in advance of two marginal), a preapical undulate fascia, widely interrupted at the suture, widening in each direction on margins.

Head deeply excavated and channelled, closely uniformly punctate. *Prothorax* rather tumid, apex subtruncate, base moderately bisinuate, sides well rounded, more strongly converging to apex than to base, feebly sinuate near the produced, acute hind angles; disc with medial channel distinct, not deep, closely punctate, the lateral sculpture becoming coarse and subrugose. *Elytra* at humeral swelling slightly wider than prothorax, feebly constricted behind this, apices slightly divergent and finely bispinose; margins entire; striate-punctate, the intervals clearly punctate and evenly convex on apical, flat on basal half; underside rather closely clad with white recumbent hair.

♀. Pronotum more or less concolorous (in one example greenish-blue), underside bronze-black.

Dimensions: 10-11 × 3.5 mm.

Habitat.—Western Australia: Tammin (Mr. J. Clark).

Four examples, two of each sex, sent by my friend, Mr. Clark, show a species more robust in form, but close in pattern to *S. versicolor* L. & G. In all examples of *versicolor* that I have seen, the pronotal margins and underside are a brilliant metallic green in both sexes; while in the above described the sexual colouration is marked, while the pronotal metallic gleams are only noticeable in one example under observation and in this case with ill-defined limits. In three examples of *versicolor* before me, the prothorax is more parallel and less tumid than in my species, while the preapical fascia does not extend to the sides in two examples, and just reaches them in the third. The variable post-basal markings occur in both species.

Type in Coll. Carter.

Archaeozodes strandi Obenb. = *Stigmodera versicolor* L. & G.

Dr. Obenberger's description exactly tallies with this well known species. The genus *Archaeozodes* is thus redundant.

Dr. Obenberger persistently describes Australian Buprestidae as new species on very finely drawn differences. Thus in *Archiv für Naturgeschichte*, 1924, p. 69, one of the most widely distributed of Australian insects known as the fire beetle, † *Merimua atrata*, is redescribed as *M. corporaali* from New Guinea. I have specimens from an island in Torres Strait which correspond with his description, but which I consider but slight variation from the normal. Such variations may be found by examining long series of most common insects. Again *Briseis*

* In one example the post-basal spot is isolated from the marginal yellow area.

† From its curious habit of settling on hot ashes from camp and bush fires, slag heaps and its attraction to strong light.

sagitta Obenb. (p. 68 of the same publication) cannot, I think, be differentiated from the well known *B. conica* L. & G.

Neotorresita acharidi subsp. *occidentis* Obenb.—I have already stated (THESE PROC. 1924, p. 526) that *Neotorresita acharidi* Obenb. = *Pseudanilara cupripes* Macl., and have in the same place described as new, *Ps. occidentalis*, with clear distinction from its allies. This is apparently not the subspecies noted by Obenberger. The names *occidentis* and *occidentalis* are unfortunately close.

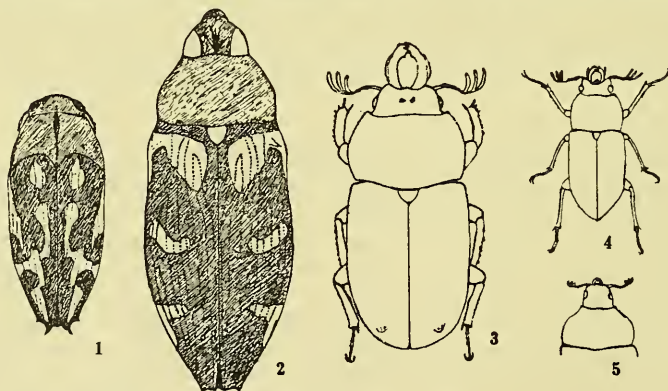
Paracephala impressicollis Obenb. must be very near *P. trans-secta* Cart., but in his description, the author does not indicate the relation of species to *P. trans-secta* Cart., nor indeed to any other member of the genus. This omission constitutes a serious deficiency in descriptions, especially in the case of genera in which the species are difficult to identify, as in *Cisseis*. Thus *Cisseis carteri* Obenb. (p. 109 of the above) is described without even a reference to the groups into which I divided the species in the "interessante Bearbeitung" politely mentioned by Dr. Obenberger. The same remark applies to the descriptions of five species of *Cisseoides*—a genus which Obenberger considers that I wrongly merged with *Hypocisseis*.

Lucanidae.

CERATOGNATHUS BITUMULATUS, n. sp. Text-fig. 3.

♂. Robust, brownish-black, sparsely clothed with yellowish-grey squamules, mandibles rather long, curved, without lateral or vertical auriculations, apices bidentate, with a third internal tooth, triangular, a little behind apex, the basal two-thirds with a laminate thickening having a sub-crenulate or granulose upper edge and terminating abruptly towards apex; clothed sparsely with silky hair and punctate externally.

Head punctate, with two round tubercles on front, eyes large and moderately prominent, the flabellae as long as the rest of the antennae. Prothorax feebly bisinuate at apex, more strongly so at base; sides rather widely and evenly rounded, all angles obtuse; lateral margins uniformly, horizontally explanate, extreme border crenulate, disc regularly and rather closely punctate, medial line smooth and slightly convex on basal half, an oval, slightly flattened depression



Text-fig. 1. *Astraeus intricatus*, n. sp.

Text-fig. 2. *Stigmodera (Castiarina) harrisoni*, n. sp.

Text-fig. 3. *Ceratognathus bitumulatus*, n. sp.

Text-fig. 4. *Ceratognathus ocellaris*, n. sp. ♂.

Text-fig. 5. *Ceratognathus ocellaris*, n. sp. ♀.

on apical half. *Scutellum* semicircular, punctate. *Elytra* sub-parallel, wider than prothorax at base, somewhat irregularly punctate, the punctures tending to run in ill-defined longitudinal series, some sub-obsolete costae just visible; each elytron with a blunt, round tumulus on the apical declivity, more or less covered with squamules. Sternal area punctate, abdomen longitudinally rugulose. Fore tibiae more spinose than usual in the genus, with three strong apical spines and about six others of larger size than the usual marginal denticulations; hind tibiae a little swollen at middle on interior margin.

Dimensions (including mandibles): 14 × 6 mm.

Habitat.—New South Wales: Mt. Kosciusko (H. J. Carter, Jan., 1906) and Barrington Tops (H. J. Carter, Jan., 1916).

♀. Rather wider and more oval, the mandibles short and stout, the antennal flabellae much shorter. *Dimensions*: 13 × 6 mm.

Three examples examined, ♂ and ♀ from Kosciusko, and a ♀ from Barrington Tops, show a species clearly separated from its nearest relative *C. gilesi* Blkb., by the presence of the elytral tumuli and the differently formed mandibles of the ♂. *C. gilesi* also has a single large tubercle on the head, the pronotum has smooth spaces, the margins are not explanate, and there is a deep medial sulcus. From *C. flabellatus* Boil., and *C. macrognathus* Boil. it differs *inter alia* by the differently shaped prothorax—in both these species the sides being “presque droits.”

Types in the National Museum, Melbourne.

CERATOGNATHUS OCULARIS, n.sp. Text-figs. 4, 5.

♂. Oblong, convex, brown, whole upper surface with sparse golden squamules.

Head, as with the whole upper surface, cellulose-punctate, frontal area without tubercles, clypeus trilobate, the antennal orbits forming acute convex lobes pointing obliquely forward, a third smaller subconical process jutting horizontally from the middle of the clypeal area, mandibles short, wide seen sideways, non-auriculate, trifid at tips, the middle tooth longest; eyes round and very prominent, antennae slender, the leaflets nearly as long as rest of antennae. *Prothorax*: Sides rather strongly and evenly rounded, anterior angles subacute, posterior obtuse, margins a little explanate, extreme border minutely serrulate in places; medial sulcus wide throughout and emphasized by a line of golden squamules on each side, more uniformly placed than elsewhere. *Scutellum* large, oval. *Elytra* parallel, convex, wider than prothorax at base, suture on apical half widely costate and with three other, fairly well defined, wide, subcostate impressions continuous from base to apical declivity. Legs slender, fore tibiae finely serrate on exterior edge, having one larger spine on apical third besides the longer but fine apical spines; tarsi very slender, hind tarsi with claw joint as long as the rest combined. Underside coarsely punctate, the punctures close on abdomen, more distant on sternal area, prosternum carinate.

♀. Differs in having the head much narrower, without the defined clypeal lobes, eyes not prominent, mandibles very short, the antennae with leaflets about half as long as in ♂; prothorax having anterior angles close to head, followed behind by a wide situation; size generally larger.

Dimensions: ♂, mandibles included, 7.5 × 3 (+), ♀ 8 × 3.5 mm.

Habitat.—New South Wales: Barrington Tops (Sydney University Expedition); Mount Wilson (H. J. Carter).

Twelve examples (4 ♂, 8 ♀) show the smallest of the described Australian species, distinguished by unusual sexual characters, e.g., clypeal structure, promin-

ent eyes of ♂, differently shaped prothorax, besides the usual differences found in the mandibles and antennae. A single ♀ only from Mount Wilson.

Type series in Macleay Museum, University of Sydney.

Table of Australian Species of *Ceratognathus* Westw.

1. Mandibles of ♂ with erect lateral horn	2
Mandibles of ♂ without erect lateral horn	3
2. Lateral horn acute	<i>niger</i> Westw.
Lateral horn laminate (subquadrate)	<i>froggatti</i> Blkb.
3. Mandibles of ♂ with careniform enlargement on upper margin terminating in a dentiform process	4
Mandibles of ♂ not so	5
4. Colour chestnut-brown	6
Colour fuscous-black	7
5. Mandibles of ♂ with round medial lobe on inside margins	<i>mentifer</i> Westw.
Mandibles without lobes or lateral tooth	8
6. Mandibles curved, sides of pronotum rounded	<i>westwoodi</i> Thoms.
Mandibles and sides of pronotum nearly straight	* <i>macrogathus</i> Boil.
7. Pronotum strongly sulcate, with smooth areas	<i>gilesi</i> Blkb.
Pronotum not (or scarcely) sulcate without smooth areas	<i>bitumulosus</i> , n. sp.
8. Size large, 15 mm. (or more) long, sides of pronotum nearly straight	9
Size small, less than 9 mm. long, sides of pronotum rounded	10
9. Erect tooth on clypeus above each eye	<i>frenchi</i> Blkb.
This clypeal tooth absent	* <i>flabellatus</i> Boil.
10. Head with frontal tubercle, transversely bipartite	<i>rufipennis</i> Westw.
Head without such tubercle, clypeus tricristate	<i>ocularis</i> , n. sp.

Although the species described by M. Boileau are unknown to me in nature, they are described in such detail—one is also well figured—that I have ventured to include them in the above table. This table only takes into account the male characters; the females would be difficult, in some cases impossible, to tabulate. *C. abdominalis* Parry from Moreton Bay, Queensland, was described from a unique ♀. Monsieur Boileau has suggested its probable synonymy with *C. froggatti* Blkb.

Tenebrionidae.

SARAGUS WILSONI, n. sp.

♂. Widely ovate, rather depressed, glabrous, the greater part of surface reddish-brown, foliate margins, antennae and tarsi castaneous, pronotum, prosternum, greater part of head and medial area of abdomen black.

Head minutely and irregularly punctate, epistoma straight in front, oblique with reflexed margin at sides, eyes separated by a space of the width of one eye, antennae with joint 3 nearly as long as 4-5 combined, 4-8 successively shorter, 9-10 nearly round, 11 oval. *Prothorax*: Disc convex, foliate margins wide and concave, total width : width of disc as 11 : 8. Anterior angles advanced and bluntly rounded, posterior acute and falcate, lateral border fine and reflexed; disc microscopically punctate, medial line very lightly impressed, without evident basal foveae. *Scutellum* transversely oval. *Elytra* ovate, of same width as prothorax at base, and rather more than twice as long; foliate margins as wide as the pronotal, continuous to, but narrowed at, apex; the red colour dotted through with round, black, subdermal spots, seen alike from above and below; border narrowly reflexed, disc nearly smooth, with a few subobsolete costae faintly indicated and (with a lens) line of minute punctures just visible, except near sides, where, besides the usual lateral row of large punctures, the adjacent two or three rows of small punctures clearly shown; prosternum finely transversely

* Unknown to author.

striolate and sparsely pustulate, episterna more strongly rugose, abdomen minutely striolate; fore legs having two basal tarsi considerably widened, hind legs having basal tarsus as long as apical, the intermediate short.

Dimensions: 17-18 × 12 mm. ♀ wanting.

Habitat.—? Western Australia (C. French, per F. E. Wilson).

Two male examples sent by Mr. Wilson who obtained them from Mr. French with other Western species, unlabelled. The species is not much smaller than *S. magister* Pasc., from which it differs in colour, flatter elytra and smoother surface, almost impunctate to the naked eye, except at sides. It is much wider than *perlaevis* Cart. The curious subdermal spots on the elytral margins are characteristic, as are the wider basal tarsi of the fore feet, the latter being probably sexual. Both examples are similar in colour which may, or may not, be due to immaturity. Type in Coll. Carter. Paratype in Coll. Wilson.

NYCTOZOILUS LATERALIS, n.sp. Text-fig. 6.

Opaque brown-black, ovate, convex; tarsi and antennae reddish.

Head: Surface scabrous and subpunctate, rather abruptly widened at antennal orbits, forehead with deep, medial, longitudinal sulcus extending from base to clypeal suture, antennae having 3rd segment longer than 4th-5th combined, the 11th longer and narrower than 10th. *Prothorax* arcuate-emarginate at apex, anterior angles acute and prominent, the tips slightly blunted; base nearly straight in middle, sinuate near sides, posterior angles acutely produced backwards; sides evenly rounded, widest in middle, subsinuate near front and hind angles; the lateral border thick and convex, a deep and fairly wide sulcus within; disc sparsely rugose, without distinct punctures, a medial sulcus clearly shown on greater part of length, obsolescent near apex and base, a large irregular foveate depression on each side of this. *Scutellum* widely transversely triangular. *Elytra* wider than prothorax at base, widely rounded in humeral region; each with three finely crenulate costae, the exterior of these shortest and sometimes obscure, besides a geminate sutural costa bifurcating behind scutellum to join the first of above costae at base, the costae becoming obliterated on apical declivity; interstices irregularly rugose and subfoveate without reticulation or transverse ridges; the usual lateral row of large punctures irregular and often undefined. Beneath subnitid and almost impunctate, apical segments with very minute punctures; tibiae feebly tomentose; posterior tarsi with basal joint as long as the rest combined.

Dimensions: 16-17 × 8-9 mm.

Habitat.—Queensland: Byfield near Yeppoon (T. G. Sloane and H. J. Carter).

Three examples (2 ♂, 1 ♀) were taken under dead Eucalyptus branches. The species belongs to the first group of my table, where it would stand between *N. ruficornis* Cart., and *mastersi* Macl., having somewhat similar elytral sculpture to the former and the thick pronotal border of the latter. The strong frontal sulcus is a notable character. Type in Coll. Carter.

As eight species have been added since my tabulation of *Nyctozoilus* was published (*Ann. Q. Mus.*, 1911, p. 9), I append an emended table for the help of students.

Table of *Nyctozoilus* Guér.

1. Pronotum rugose or squamose; not, or very vaguely, punctate	2
Pronotum clearly punctate	8
2. Lateral border of pronotum crenulate	<i>deyrollei</i> Bates
Lateral border of pronotum entire	3

3.	Elytra 6-costate, intervals not, or very vaguely, reticulate	4
	Elytra 6-costate, intervals clearly reticulate	6
4.	Lateral border of pronotum thin	5
	Lateral border of pronotum thick	<i>lateralis</i> , n. sp.
5.	Lateral border of pronotum reflexed, hind angles produced	<i>carbonarius</i> Cart.
	Lateral border of pronotum sub-horizontal, hind angles not produced	<i>ruficornis</i> Cart.
6.	Lateral border of pronotum thin	7
	Lateral border of pronotum very thick	<i>mascersi</i> MacL.
7.	Pronotum coarsely rugose, anterior angles subrectangular	<i>obesus</i> Guér.
	Pronotum smooth (felt-like), anterior angles acutely produced	<i>denticollis</i> Cart.
8.	Elytra reticulate, not costate	<i>irregularis</i> Blackb.
	Elytra costate	9
9.	Elytra 8-costate	10
	Elytra 6-costate	15
10.	Size large, 15-20 mm. long	11
	Size small, 12 mm. long or less	13
11.	Elytral costae undulate	12
	Elytral costae straight	<i>puncto-costatus</i> Cart.
12.	Elytral intervals irregularly reticulate (20 × 10 mm.)	<i>marginatus</i> Cart.
	Elytral intervals foveate-punctate (16 × 9 mm.)	<i>crassus</i> Cart.
13.	Elytral intervals clearly punctate	<i>pusillus</i> Cart.
	Elytral intervals not (or very minutely) punctate	14
14.	Elytral intervals with transverse ridges	<i>*daemeli</i> Haag.
	Elytral intervals subobsoletely vermiculate	<i>parvus</i> Cart.
15.	Elytral intervals clearly reticulate	16
	Elytral intervals obsoletely or indefinitely reticulate	20
16.	Size large, 17-20 mm. long	17
	Size small, 13 mm. long or less	18
17.	Pronotal border thin, hind angles directed outwards	<i>reticulatus</i> Bates
	Pronotal border thick, hind angles directed backward	<i>carlovillensis</i> Cart.
18.	Pronotum very indistinctly punctate	19
	Pronotum clearly punctate	† <i>inaequalis</i> Blackb.
19.	Pronotal margins reflexed, extreme border thickened	<i>crassicornis</i> Blackb.
	Pronotal margins horizontal, extreme border thin	<i>approximatus</i> Blackb.
20.	Sides of pronotum sinuate anteriorly and posteriorly	<i>hardcastlei</i> Cart.
	Sides of pronotum sinuate only posteriorly	21
21.	Elytral intervals indefinitely reticulate	<i>vermiculatus</i> Cart.
	Elytral intervals feebly wrinkled	<i>sexcostatus</i> Champ.

BYALLIUS ANGUSTATUS, n.sp. Text-fig. 7.

Elongate, ovate, convex, subopaque black; apical joints of antennae pale brown, tarsi beneath and apices of tibiae clothed with red tomentum.

Head finely punctate, epistoma truncate, forming an angle with antennal orbit; antennae enlarging to apex, joint 3 as long as 4-5 combined, 8-10 transverse, 11 oval. *Prothorax* considerably narrower at apex than at base, widest near base; apex arcuate-emarginate, anterior angles acutely produced forward, base subtruncate, sides very little widened, lightly widening to one-third of length, thence subangulately but feebly widening to middle third, thence roundly contracting behind, posterior angles obtuse; margins very thick and subvertically revolute, sulcate within; disc nearly smooth, punctures only to be seen with the aid of lens; without foveae or medial line. *Scutellum* widely triangular and shallow, with triangular depression behind. *Elytra* at extreme base narrower than prothorax, shoulders obsolete; narrowly ovate, apical declivity steep; disc vermiculately rugose-punctate, with three well-raised undulate costae besides the geminate sutural costa (bifurcating behind the scutellum), intervals irregularly rugose and punctate, a row of large punctures at sides. Underside minutely punctured, the

* I am a little doubtful of the distinction between *parvus* Cart. and *daemeli* Haag.

† Species unknown to the author.

first three abdominal segments with fine longitudinal wrinkles; post tarsi with basal segment nearly as long as the rest combined.

Dimensions: 15 × 7 mm.

Habitat.—New South Wales: Nerriga, between Goulburn and Braidwood (H. G. Carter).

A single example (? ♂) was lately taken by my son. It is very distinct from the six described species by the combination of smaller, especially narrower, form (of both prothorax and elytra), the strongly thickened and elevated border of pronotum with its minutely punctured disc. It is perhaps nearest to *B. ovensis* Cart., in which, however, the pronotal border is narrower and less raised while the anterior angles are outwardly directed. Type in Coll. Carter.

Byallius (Styrus) revolutus Cart.—When describing *Styrus revolutus* (*Trans. Roy. Soc. S. Aust.*, 1914, p. 331) I commented on its marked distinction from other species of *Styrus* in the "entire, thickened, strongly revolute margins of prothorax—its truncate base" and its similarity to *Byallius* in the form of the prothorax. I now find that these characters point to its inclusion in *Byallius*, to which genus I would now refer it.

CHARIOTHES VARIPENNIS, n. sp.

Shortly oblong, glabrous and nitid. Head, pronotum and underside black, elytra varicoloured, legs red-brown, antennae, palpi and tarsi pale red.

Head: Epistoma semicircular, separating sulcus nearly straight, much more finely punctate than frontal area, the punctures on the latter rather coarse; antennal joints 1-2 short, 1-6 cylindric, 5-11 gradually increasing in width, 11th largest, oval. *Prothorax* subquadrate, wider than long, apex nearly as wide as base, the base produced a little backwards in middle, anterior angles widely obtuse, posterior rectangular, lateral border narrow, without foliation, an elongate depression near border, a transverse depression near basal margin, disc sparsely and finely punctate without a sign of medial line. *Scutellum* triangular. *Elytra* of same width as prothorax at base, subparallel for the greater part, rather bluntly rounded at apex, lateral border very narrow; striate-punctate, each with eight striae, besides a short scutellary one containing close, moderately large punctures, intervals convex and impunctate; the suture bright green, the two adjacent intervals purple, the next three dark green, the lateral three purple, coppery and bright green respectively. Underside minutely and faintly punctate.

Dimensions: 6.65 × 2.23 mm.

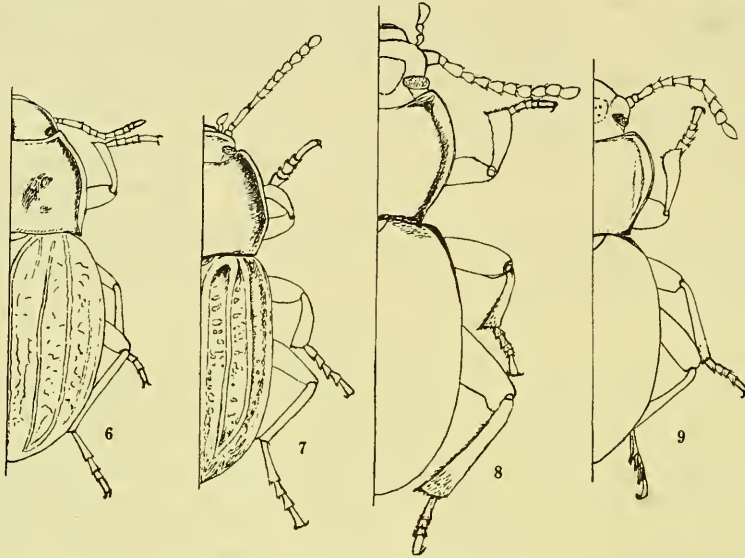
Habitat.—Queensland: Cairns district (Dr. J. F. Illingworth).

Two examples sent by Dr. Illingworth to the Imperial Bureau of Entomology were presented to the British Museum. The species is near *C. cupripennis* Pasc., and may be only a geographical race of that species. Mr. K. G. Blair has kindly compared it with Pascoe's species and notes the following differences:—

<i>C. cupripennis</i> Pasc.	<i>C. varipennis</i> Cart.
<i>Antennae and tarsi</i> dark.	Bright red.
<i>Elytra</i> feebly striate, interstices nearly flat.	Strongly striate, punctures much deeper and stronger.
<i>Colours</i> not longitudinally arranged, humeral and apical areas reddish-coppery, suture green, median area mainly brassy.	<i>Colours</i> in marked longitudinal bands.

Type in British Museum.

Chariothes (Menephilus) brevis Cart.—I concur with Mr. Blair's opinion that this species should be transferred to *Chariothes*. It differs from *C. varipennis* in having more brightly coloured elytra, produced anterior angles to prothorax, the margins narrowly but clearly foliate, disc densely and strongly punctate, elytral intervals flat *inter alia*.



Text-fig. 6. *Nyctozoilus lateralis*, n. sp.

Text-fig. 7. *Byallius angustatus*, n. sp.

Text-fig. 8. *Cardiothorax hopsoni*, n. sp.

Text-fig. 9. *Cardiothorax harrisoni*, n. sp.

CARDIOTHORAX HOPSONI, n. sp. Text-fig. 8.

♂. Elongate-ovate, nitid dark bronze above, black beneath, antennae and tarsi reddish.

Head: Epistoma arcuate (concave) in front, subsinuate at sides, antennal orbits rather tumid, frontal impression deep and scutate, its central area raised, antennae stout, gradually widening outwards. *Prothorax* elongate, widest in front of middle, apex arcuate, anterior angles prominent and rather acute, sides moderately rounded, converging rather strongly and sinuate before the posterior angles, these subrectangular, with a short blunt tooth produced backward, base slightly arcuate, this emphasized by the produced angles; foliate margins moderately wide on apical half, strongly narrowing to base, without separating sulcus or setae; disc with a clean-cut medial channel, a light transverse depression near base and posterior angles. *Scutellum* smooth, oval. *Elytra* widely ovate, wider than prothorax at base, epipleural fold evident but not prominent, humeri obliquely rounded off, elytra striate (or sulcate) punctate, fine and rather close punctures clearly visible in the deep striae, intervals 3 and 5 wider than rest and moderately convex on disc, becoming more strongly so near apex; epipleurae and underside impunctate; the hind femora with a strong blunt tooth directed inwards; mid-femora swollen and sub-dentate, hind tibiae moderately enlarged and flattened.

♀. Without these special femoral and tibial characters.

Dimensions: ♂, 21 × 7.3 mm.; ♀, 19 × 7 (+) mm.

Habitat.—New South Wales: Barrington Tops (Mr. John Hopson).

Three examples were taken by Mr. Hopson, the well known pioneer and naturalist of the district, in *Fagus* brush on the nine-mile spur of the plateau, of which two (the sexes) are under observation, the third being snapped up by a tame magpie.

It is a large species that combines to some extent the sexual characters of *femoratus* Bates and the *walckenaeri* Hope group, with a posterior emargination to the prothorax that is unlike any other, though approaching Hope's species. The distinct seriate punctures on the elytra is a very rare feature in the genus.

Type in Coll. Carter.

CARDIOTHORAX HARRISONI, n. sp. Text-fig. 9.

Elongate-ovate, convex, very nitid bronze above, black beneath, antennae and tarsi piceous.

Head: Epistoma rather bluntly pointed and reflexed in front, its sides oblique, frontal impression rather small, foveate within (in some examples impressed as if by a cloven hoof); antennae less stout than usual, lightly enlarged outwards. *Prothorax* 4 × 5 mm., widest near middle, apex arcuate, anterior angles rather sharply subrectangular, sides moderately widely and evenly rounded, a feeble sinuation near the very small posterior tooth (this little more than a slight production of the border, downward and obliquely outward), base subtruncate; foliate margins horizontal and moderately wide, bearing two to three distinct setae, with a short sulcus separating it from disc, extreme border finely reflexed. *Scutellum* large, oval, convex and smooth. *Elytra*: Shoulders little defined and obliquely rounded; sulcate, with six well marked sulci on disc, the seventh and sometimes the eighth visible on sides; intervals sub-depressed; epipleurae and underside smooth and impunctate.

Dimensions: 15-16.5 × 5.5-6 mm.

Habitat.—New South Wales: Barrington Tops.

Six examples taken by the University expedition of January, 1925, in the Eucalyptus country near the Bull's Head Crossing. The sexual characters are not well defined, shown chiefly by the enlarged tarsi and widened apices of front tibiae and the slightly curved under margin of hind tibiae of the male. The species is nearest to *C. macleayensis* Cart., from which it differs in larger size, more convex form and different elytral sculpture, *macleayensis* having only five clearly marked sulci on each elytron, with more convex intervals, also with larger and more outwardly directed hind angles to prothorax.

Type in the Macleay Museum.

ADELIUM SUB-LAEVIGATUM, n. sp.

Widely ovate; sub-opaque black above, nitid black beneath; antennae and tarsi reddish-brown.

Head sub-laevigate (clypeus sparsely and minutely punctate), the clypeal suture strongly impressed, a frontal triangular impression based thereon, antennal segments sub-conic, 3 as long as 4-5 combined. *Prothorax* rather flat, widest behind middle; sub-laevigate, the only evident sculpture consisting of (1) a feeble impressed medial line near basal half, not extending to base, (2) some undefined depressions separating foliation from disc, (3) a small deep fovea on each side placed on this depression behind the middle, (4) a few minute, shallow punctures on disc. All angles obtuse, the posterior the more widely so; sides widely rounded, with a thin reflexed edge; feebly sinuate before the hind angles; base sub-

truncate, the hind angles produced a little backward. *Scutellum* semicircular. *Elytra*: Shoulders widely rounded; striate-foveate-reticulate, the striae near suture almost entire (without transverse septa), the elongate reticulations more defined and short towards sides. Underside glabrous and laevigate, except for lateral foveae of abdomen, and the epipleurae with shallow punctures.

Dimensions: 15 × 7 mm.

Habitat.—Queensland: Byfield, near Yeppoon (H. J. Carter).

A single example taken under dead boughs, belongs by its elytral sculpture to the *geminatum-reticulatum* group, but differs from all described species thereof by the opaque black, sub-laevigate surface of its pronotum and the non-dentate posterior angles; in the latter character resembling *A. plicigerum* Pasc.

Type in Coll. Carter.

SEIROTRANA ANOMALA, n. sp.

Oblong-ovate, depressed, bright bronze above, darker bronze beneath, apices of femora testaceous, tarsi reddish, antennae piceous.

Head densely rugose-punctate; antennae submoniliform, gradually widening to apex, 3 not much longer than 4, 11 elongate-oval. *Prothorax* 3 × 4 mm., arcuate-emarginate at apex, anterior angles rather widely acute (apex slightly blunted), base subtruncate, sides moderately rounded on anterior three-quarters, then rather strongly sinuately incurved to the rectangular posterior angles, extreme margins finely, irregularly crenulate (in two out of nine examples this crenulation sub-obsolete); disc densely and rather coarsely punctate with larger punctures irregularly and sparsely placed; without distinct medial line, but foveate depression generally indicating its position near base. *Scutellum* transversely punctate. *Elytra* wider than prothorax at base, humeri rather squarely rounded; seriate-punctate (the seriate punctures smaller and more distant than in *S. parallela* Germ.), the 5th, 7th and 9th intervals having rows of elongate, shining nodules, other intervals containing minute round nodules, all intervals impunctate, suture flat throughout. Episterna and epipleurae coarsely punctate, rest of underside very finely so.

Dimensions: 10-12 × 4.5-5 mm.

Habitat.—New South Wales: Barrington Tops.

VAR.—Three examples of the nine before me (of which one is from Eccleston, Allyn River) have the femora concolorous with the general surface; but are without any other distinction. I can find no sexual distinction in the structure.

Six examples of the typical form and two of the variety were taken by the University expedition, generally under dead Eucalyptus boughs lying on the ground. The species is exceptional in having the crenulate sides of prothorax of my Group i, with the punctured disc with larger punctures interspersed of Group ii. It is more naturally allied to *geniculata* Haag. and *femoralis* Maccl., from which it can be distinguished by the pronotal sculpture alone.

Type in Macleay Museum.

SEIROTRANA CARBO, n. sp.

Elongate-ovate, depressed, dull black above, nitid black beneath, tarsi and apical segments of antennae piceous.

Head coarsely rugose-punctate on forehead, clypeal area punctate only; antennae rather stout, 3rd segment about 1½ times as long as 4th; 8th-11th oval and successively widening, 11th longer than 10th. *Prothorax* 3 × 4 mm., circularly emarginate at apex, anterior angles acute, base subtruncate (with a wide, shallow

“bay” in the middle), sides lightly rounded, widest at middle, extreme border subcrenulate, with some feeble irregularities on posterior half; a wide shallow concavity preceding the obtuse hind angles; disc closely and finely longitudinally strigose-punctate; medial channel well defined throughout in one example (♂); less defined in the second (? ♀). *Scutellum* transverse, oval. *Elytra* wider than the prothorax at base, humeral angles a little rounded but defined. Seriate-punctate, with rows of large round punctures, intervals finely punctate, the 3rd, 5th, 7th and 9th having rows of elongate, shining studs, becoming sharply raised towards the sides; the alternate intervals with small, feebly indicated nodules; the suture itself irregularly raised. Episterna and epipleurae with large, sparse punctures, the first three segments of abdomen finely but deeply, longitudinally strigose.

Dimensions: 12 × 5 mm.

Habitat.—Queensland: Byfield (H. J. Carter).

Two examples (I think the sexes) were taken under dead Eucalyptus boughs. The species belongs to my first group, having the pronotum laterally crenulate, disc regularly vermiculate-punctate, without larger punctures interspersed. In this group it would come near *catenulata* by colour; but is readily separated from that species by the smaller size, the pronotum with less widened sides and much more finely sculptured disc *inter multa alia*.

Type in Coll. Carter.

Since tabulating the genus *Seirotana* in 1908, new species have been added, while other modifications of the table are desirable, though I find it difficult to separate some of the species in the few words convenient for such tabulation. The following table may now replace the former one. *S. mastersi* Pasc. and *S. monticola* Blackb. are now transferred to Group ii. With more material I find that these can scarcely be said to have crenulate margins to the pronotum, though a slight irregularity can be seen in some examples, while both have the dual system of puncturation noted for Group ii. *S. orphanana* Pasc., as with *S. repanda* Pasc., was described as an *Adelium* but clearly belongs to this genus. *S. foliata* Carter = *Adelodemus squalidus* Macl. and must be placed as a synonym. I was deceived by the small size and abraded clothing of the unique example, which exposed the elytral sculpture to an unusual extent, while the post tarsi were wanting.

Table of *Seirotana*.

GROUP i. Sides of pronotum crenulate.

1. Disc of pronotum vermiculate or strigose-punctate without larger punctures interspersed	2
Disc of pronotum densely punctate with larger punctures interspersed <i>anomala</i> Cart.	
Disc of pronotum nodulose	<i>crenicollis</i> Pasc.
	var. <i>denticollis</i> Cart.
Disc of pronotum with wide longitudinal sulcus	<i>nosodermoides</i> Pasc.
2. Elytra with all intervals costate and crenulate	<i>strigipennis</i> Bates
Elytra with alternate intervals catenulate	3
3. Femora yellow at apex	4
Femora unicolorous	5
4. Colour black, or nearly so	<i>geniculata</i> Haag.
Colour bright copper, size much smaller	<i>femoralis</i> Macl.
5. Size large (more than 15 mm. long)	<i>major</i> Blackb.
Size smaller (less than 15 mm. long)	6
6. Colour black	7
Colour bronze	8
7. Pronotum coarsely rugose-punctate, sides strongly crenulate	<i>catenulata</i> Boisd.
Pronotum finely strigose-punctate, sides feebly crenulate	<i>carbo</i> , n. sp.

8. Non-catenulate intervals of elytra bearing small granules 9
 Non-catenulate intervals without such granules *vicina* Cart.
 9. Elytral intervals, at least on basal half, with transverse septa .. *sub-cancellata* Cart.
 Elytral intervals without transverse septa 10
 10. Colour dark bronze, suture not, or scarcely nodulose 11
 Colour coppery-bronze, suture strongly nodulose *vertebralis* Cart.
 11. Seriate punctures of elytra large *proxima* Pasc.
 Seriate punctures of elytra smaller *minor* Cart.

GROUP ii. Sides of pronotum entire; disc generally finely punctate
 with larger punctures interspersed.

1. Elytra having alternate intervals catenulate 2
 Elytra without raised, nitid, elongate nodules 10
 2. Elytral nodules conspicuously raised 3
 Elytral nodules inconspicuous 6
 3. Size large (more than 15 mm. long) *mastersi* Pasc.
 Size smaller (less than 15 mm. long) 4
 4. Elytral nodules longitudinal 5
 Elytral nodules irregular and oblique *nodicauda* Cart.
 5. Narrow and parallel, seriate punctures large *parallela* Germ.
 Ovate, seriate punctures small *bimetallica* Cart.
 6. Colour bronze, nodules not confined to apical area 7
 Colour black, nodules only apparent near apex *simplex* Blackb.
 7. Elongate sub-parallel, seriate punctures large 8
 Ovate, seriate, punctures small 9
 8. Ground punctures of pronotum very fine *elongata* Erichs.
 Ground punctures of pronotum not very fine *integricollis* Haag.
 9. Form short and wide, colour coppery *repanda* Pasc.
 Form more elongate, colour dark bronze *monticola* Blackb.
 10. Intervals of elytra flat 11
 Intervals of elytra convex 13
 11. Size large (more than 15 mm. long) *punctifera* Macl.
 Size small (10-12 mm. long) 12
 12. Elytral intervals with minute pustules *simsoni* Cart.
 Elytral intervals impustulate *orphana* Pasc.
 13. Colour bronze, alternate intervals interrupted by punctures *tumulosa* Cart.
 Colour black, elytral intervals uniform *uniformis* Cart.

BRYCOPIA QUADRATICOLLIS, n. sp.

Elongate, narrowly ovate, bright bronze, glabrous and very nitid; antennae and tarsi pale red, legs darker red.

Head very minutely punctate, eyes prominent, antennae moniliform, except the subcylindric 3rd segment, 8th-11th successively wider, 11th oval, much larger than 10th. *Prothorax* nearly square (2 mm. long), slightly wider than long, apex lightly arcuate, anterior angles feebly advanced and obtusely rounded; sides subparallel for the greater part, feebly narrowed at apex; base truncate, posterior angles rectangular, without foliate margins, a very narrow horizontal border visible; disc minutely and sparsely punctate, without medial line or evident foveae. *Scutellum* equiangular triangular. *Elytra* of same width as prothorax at base, shoulders obsolete, sides subparallel; striate-punctate, the punctures in striae round and regular, closer and larger near suture, smaller and more distant towards sides; intervals flat with some minute sparse punctures. Underside minutely and sparsely punctate.

Dimensions: 6 × 2 (+) mm.

Habitat.—New South Wales: Barrington Tops (H. J. Carter).

I took a single example in rotten Eucalyptus wood at an altitude of 5,000 ft. It is very distinct in its cylindric form and nitid surface from any of its congeners.

In my tabulation (PROC. LINN. SOC. N.S.W., 1920, p. 247) it would come next to *minor* Cart., thus:—

30a. Sides of prothorax subparallel *B. quadraticollis*, n. sp.
Type in Macleay Museum.

Cistelidae.

CHROMOMOEAE ELEANORA, n. sp.

Elongate, subparallel, metallic-black above, nitid black beneath, oral organs, tibiae and tarsi (sometimes femora also) testaceous (becoming red in older specimens), three apical joints of antennae, also tarsal lamellae, infusate.

Head densely striolate-punctate; antennae lineate, 3-10 successively shorter and slightly wider, 11 shorter and narrower than 10. *Prothorax* of same width as head, about as long as wide, base and apex truncate, sides slightly obliquely widened from apex to base, and a little rounded at apex, disc closely and finely punctate, a medial line indicated near base, bisecting a large basal depression, a transverse sulcus parallel and close to base. *Scutellum* transversely oval. *Elytra* wider than prothorax at base and three and a half times as long, shoulders squarely rounded, sides nearly parallel for the greater part; striate-punctate, the punctures largely hidden in the deep sulci, intervals widely convex, densely transversely wrinkled or strigose-punctate, a sparse tomentum visible on apical area. Underside finely punctate and glabrous; legs unarmed in both sexes.

Dimensions: 10-11 x 3 mm.

Habitat.—New South Wales: Barrington Tops. Four examples examined, one taken by myself, December, 1915, the others taken by the University Expedition, January, 1925.

Except *C. violacea* Cart., from the same district and the following species this is the largest of the genus, and differs from *C. rufescens* Bates in colour and sculpture, the latter being much finer in Bates's species (of which I possess a cotype). From *violacea* it differs in size, colour and in the shorter and wider prothorax, which is unusually wide for the genus, but I am unwilling to erect a new genus on this character alone, since in other respects it is a typical *Chromomoea*. I name it in honour of Miss Eleanor Chase, lecturer in Zoology in the University of Sydney, an active collector of the expedition.

Type in the Macleay Museum.

CHROMOMOEAE OCULATA, n. sp.

Elongate; parallel, red or castaneous, underside and appendages testaceous, mandibles infusate.

Head and pronotum very finely and sparsely punctate, eyes unusually large and prominent, invading the frontal area, the interspace between eyes less than the transverse diameter of one eye, as seen from above; antennae narrowly lineate, segments less enlarged than in *rufescens* Bates, *violacea* or *eleanora*, in length intermediate between the shorter segments of *rufescens* and the longer of *eleanora*, the 11th equal in length to the 10th. *Prothorax* subcylindric, slightly longer than wide, truncate at apex and base, anterior angles rounded, posterior sharply rectangular, medial channel shown for the greater part, but not continued to apex and lying in two longitudinal depressions, one basal, the other pre-apical; a transverse fovea near posterior angles. *Scutellum* triangular. *Elytra* considerably wider than prothorax, humeri prominent and squarely rounded, sides parallel for the greater part, apices separately and sharply rounded; striate-

punctate, punctures in striae very close; intervals equal and regularly convex, sharply so on apical third, finely and sparsely punctate, not wrinkled. Prosternum punctate, elsewhere laevigate and nitid. Legs unarmed in both sexes.

Dimensions: 10-12 × 2½-3 (+) mm.

Habitat.—South Queensland: Tambourine Mountain (H. J. Carter).

I took four examples, including the sexes, by beating foliage in November, 1924. One of these, apparently more mature than the others, is a darker red in colour. It is distinguished from *C. rufescens* Bates by its much larger eyes as well as by its much finer and sparser surface punctures, the elytra without transverse striolation.

Type in Coll. Carter.
